

REMARKS

REMARKS REGARDING AMENDMENTS TO THE SPECIFICATION AND THE NEW CLAIMS:

The new claims have been added to recite the braking arrangement in means+function form in order to fully capture and rely upon the functional characteristics of the disc brake means and the included brake lining means. Support therefore is found in the application as originally filed as is evidenced by the Office's dislike for Applicant's utilization of functional language in the apparatus claims; however, paragraph [0012] has been amended to give express correspondence and antecedent basis to this terminology.

It is respectfully urged that the feature of a "disc brake means for retarding motion of a heavy vehicle and for limiting a number of band shaped wear modes" was adequately included in the previously submitted claims to the extent that searching was required. In that no disclosure of this feature has been proffered, it is presumed that the feature is not known in the art. However, should such a rejection be made hereto, it is respectfully urged that the next Action be made non-final.

IN RESPONSE TO THE OFFICE ACTION:

OBJECTION UNDER 35 U.S.C. § 112:

The claims have been amended to remove the objectionable subject matter.

REJECTION UNDER 35 U.S.C. § 103(a):

Claims 1 - 2 and 5 - 12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Daghigh et al (U.S. 5,568,846) in view of Tasker et al. (U.S. 5,855,416) and in view of Okayama et al. (U.S. 6,620,860) or Wirth (DE 4133593) or Kappich (DE 19507102).

Okayama '860 describes a general friction material and a way to evaluate the properties of the friction material. This evaluation is done with a testing machine in which a rotor is used. The Examiner asserts that this testing machine displays a B/R-ratio of less than 0.38 as claimed by Applicant.

Firstly, this is not true. As stated in [0048] of the present application, R is the active radius measured from the center of the disc to the point of contact furthest away from the center. Applying this to Figure 3 of Okayama '860, the active radius at the furthest edge of friction material 3 can be calculated. Using trigonometry, the active radius equals 25.15 according to the measures given. This gives a B/R-ratio of .40 which is more than 0.38.

Secondly, Okayama '860 only teaches the testing of a friction material and does not mention anything about the relation between the rotor and the friction material. The rotor of the testing machine can for that reason be considered as being accidentally chosen. This rotor is of course not at all suited for the use in heavy vehicles. The document does not give the skilled person any suggestion on how to optimize a friction pair for a heavy vehicle and how to select the relationship between the rotor and the friction material.

Since Okayama '860 only hints at a suitable friction material, the only teaching the skilled person would get from a combination with Daghigh et al. '846 or Tasker et al. '416 is how to select a friction material.

The examiner claims that there is no evidence that the claimed selection is critical. In paragraph [0009] it is stated that tests show that a friction pair with a B/R ratio of 0.37 obtains a

33% longer working life than a B/R ratio of 0.42. There is thus a large correspondence between wear and the B/R ratio of about 0.38.

This theory is defined in the application and has not been disclosed, taught or suggested before. The skilled person would therefore not look for an upper limit for the B/R ratio.

As for "routine experimentation", the common belief before the application (and probably even now) is that a wider brake pad gives less wear. This conventional wisdom is supported by all of the presently cited documents where each fails to show an upper limit for the B/R ratio.

A primary reason is the now-claimed and important factor regarding experienced wear which is influenced by the disclosed band-shaped wear. If this is not realized, there will be no reason to search an upper limit. This has nothing to do with vibration reduction to which Examiner continues to refer.

Applicants have made an earnest attempt to respond to all the points included in the Office Action. Request is respectfully made for reconsideration of the application and notification of allowance of claims 1, 2 and 5 - 18 in the next paper from the Office.

The undersigned representative requests any extension of time that may be deemed necessary to further the prosecution of this application.

The undersigned representative authorizes the Commissioner to charge any additional fees under 37 C.F.R. 1.16 or 1.17 that may be required, or credit any overpayment, to Deposit Account No. 14-1437, referencing Order No. 00173.0043.PCUS00.

In order to facilitate the resolution of any issues or questions presented by this paper, the Examiner should directly contact the undersigned by phone to further the discussion.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Tracy W. Druce". The signature is fluid and cursive, with the first name "Tracy" and last name "Druce" clearly distinguishable.

Tracy W. Druce, Esq.
Reg. No. 35,493